

# CHAPTER 5

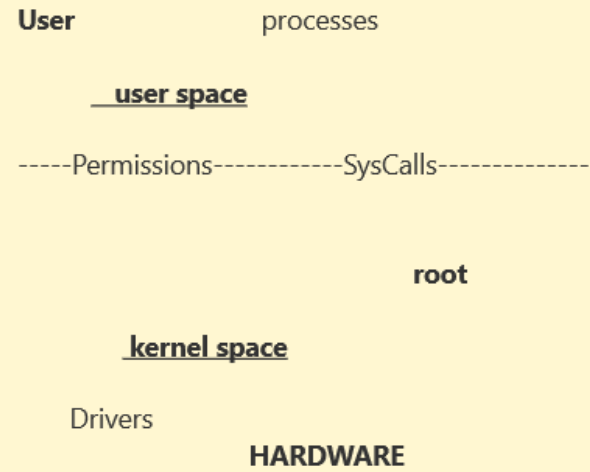
By :

Vishu Goyal

Etisha Jain

## LINUX 5.1 Understanding the Root User

Architecture of Operating system



If user want to do anything with the hardware like file writing or reading or execute or anything else.

It should pass the permissions and then it communicate with the the hardware.

But if root want to communicate. it will communicate directly with hardware without accessing the any permissions.

### **LINUX 5.2 Logging into the GUI**

Upper right corner there is shortcuts.

you can also login the ordinary user  
and also login the non ordinary user.

### **LINUX 5.3 Logging in to the Console**

you can login with the user without have a GUI  
by passing username and its passwd to login.

### **LINUX 5.4 Understanding the virtual terminals**

default terminal are 6 in linux:  
ctrl + alt + function key with sequence number

### **LINUX 5.5 Switching Between Virtual Terminals**

- tty1- tty6 are available for login
- if installed and active, the GUI is on tty1
- use chvt to switch between virtual terminals
- or use Ctrl + Alt + Fn for GUI mode

### **LINUX 5.6 Using su to work as Another User**

- su is used to open a shell as another user
- Useful to open a root shell
- For root, useful to test functionality as a user.
  
- The password of the target user is required for security
- Use su- to open a login shell
- This will give complete access to the environment of the target user.
  
- chvt command only works with root user other ordinary user will not work
- shows an error file descriptor.

### LINUX 5.7 Using sudo to perform Administrator Task

- **sudo** is used to run task as another user
- **sudo** prompts for the password of the current user
- Users must be authorized to use **sudo**
- Authorization through **/etc/sudoers** and **/etc/sudoers.d/\***
- donot edit the above files directly use **visudo** to edit sudoers files
- users that are the members of the **group wheel** can use sudo to run **administrations tasks**.

### Practical

- In the root shell, **visudo** and then press enter
- press G to go down of the page.
- **allows people in group wheel to run all commands**
- `%wheel ALL=(ALL) ALL`
- **Same thing without a password**
- `%wheel ALL=(ALL) NOPASSWD: ALL`
- **Allows members of the users group to shutdown this system**
- `%users localhost=/sbin/shutdown -h now`
- **linda ALL=/usr/sbin/useradd, /usr/bin/passwd**
- linda will add the user and change the passwd through any pc
- **id** it shows the id and group of the student
- **su -** to move in root user
- The below command will allows you to give permission to use sudo permission
- **usermod -aG wheel student** it will add a user to a group wheel
- exit
- **id** it doesn't reflect it thats why we can login it again.
- login again
- now
- **sudo useradd bob**
- **tail -n 1 /etc/passwd**
- **su - linda**
- **sudo useradd alice**
- **tail -n 1 /etc/passwd**
- **sudo passwd alice**
- successfully run all the above cmd becex of changing in the configuration files
- but, **sudo userdel -rf alice** won't works properly because it doesn't have permission to access it.

### **LINUX 5.8 Using ssh to Log in Remotely**

- **SSH** is **Secure Shell**, and used to establish a secured remote connection
  - Identity of target server is verified through host keys
  - After initial connection, host key is stored in **~/.ssh/known\_hosts**
  - Sensitive data will be sent through an encrypted connection
  - Use **ssh -X** or **ssh -Y** to display graphical screens from the target server locally.
- 
- **ssh localhost**
  - **ssh [linda@localhost](#)**
  - **ssh -Y [linda@localhost](#)**

The background is a blue gradient. In the corners, there are decorative white line art elements resembling circuit boards or neural networks, with lines and small circles.

Thank You for Reading this  
Slides...